SECTION 5

MINIMUM REQUIREMENT #4

PRESERVATION OF NATURAL DRAINAGE SYSTEMS AND OUTFALLS

NATURAL DRAINAGE COURSE DESCRIPTION

The site is currently mostly forested and wooded with some pasturelands in the southern portions of the site. There is a utility easement in the middle of the site on a N-S bearing that has a gravel maintenance road within it. This gravel road connects to chain lake road to the north. The site has two drainage basins, one that drains to the south toward the Sinclair Heights project, and one to the north that drains overland to the north, toward Chain Lake Road.

South Basin:

The south basin that contains the vast majority of the site, will contain a large detention pond. This pond will be located at the south end of the site and will be made completely of earthen berms and cut slopes. The pond will have 1' of dead storage for sediment removal and a biofiltration swale downstream of the detention pond. The biofiltration swale will discharge to a level spreader which will disperse flows into the adjacent wetland to the south of the site. The pond will be fitted with an emergency overflow structure, or "Bird Cage" that will be fitted on the frop T orifice release structure, and then a secondary emergency overflow spillway over the south bank of the detention pond. This secondary emergency overflow will be armored with quarry spalls and will also drain south into the adjacent wetland. The detention pond has been designed utilizing the latest version of WWHM3 continuous storm modeling software as per the 2005 DOE manual for existing versus proposed drainage release rates. The point of compliance is the location where the flows leave the proposed level spreader, which is the southernmost portion, and the point of the lowest elevation of the site.

North Basin:

The northern basin which is a very small portion of the site (3.6 acres of the total 35 acres), will be released to the north in its natural drainage course toward Chain Lake Road. Of the developed portion of the north basin, only the downhill 0.83 acres will be released to the north. The remainder of the plat in the north basin (2.77 acres) will be diverted to the south basin and into the proposed detention pond. This is due to the fact that the several utility (natural gas, domestic water) easements within this north basin make it very difficult to design a detention system within this north basin. And by over detaining in the south basin, within the existing detention pond, we are able to eliminate the need for two detention systems. Thus providing a more cost efficient storm drainage system, with much less maintenance for the city of Monroe and the homeowners association to operate and maintain. This 0.83 acres was chosen to keep the developed release rates .vs. pre-developed rates to the north basin within the guidelines of the 2005 DOE manual, thus meeting all Point of Compliance (POC) release rate criteria for the entire site, while utilizing one detention pond.